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What Does "Free Will" Mean?

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Abstract: Robert Sapolsky argues that free will requires complete independence from uncontrollable influences. We claim this criterion is overly demanding and misaligned with ordinary understandings of free will. To assess folk intuitions, we presented 197 American participants with five scenarios in which a person's behavior was shaped by uncontrollable factors. In four cases—preferences, genetic traits, brain function, and advertising—most participants judged the person to possess free will. A fifth scenario involving a compliance drug served as a control; here, most participants denied free will. These findings suggest that laypeople consider free will compatible with certain external influences. Thus, Sapolsky's conception diverges from common usage. While his strict definition may rule out free will, our results support the viability of a more moderate and widely endorsed conception. Any attempt to refute free will must first demonstrate that the definition used captures its common meaning.

Keywords: *Free will, determinism, folk intuitions, external influences*.

Resumen: Robert Sapolsky sostiene que el libre albedrío requiere una independencia total frente a influencias incontrolables. Sostenemos que este criterio es excesivamente restrictivo y no se ajusta al uso común del concepto. Para evaluar las intuiciones populares, presentamos a 197 participantes estadounidenses cinco escenarios en los que una persona actuaba bajo influencias externas. En cuatro casos—preferencias, genética, función cerebral y publicidad—la mayoría consideró que la persona tenía libre albedrío. Un quinto escenario, con administración de drogas de obediencia, sirvió como control: allí, la mayoría negó la existencia de libre albedrío. Estos resultados indican que, para la mayoría, el libre albedrío es compatible con ciertas influencias externas. La concepción de Sapolsky, por tanto, se aleja del uso habitual. Aunque su definición estricta puede excluir el libre albedrío, nuestros datos apoyan una concepción más moderada y socialmente compartida. Rechazar el libre albedrío exige, primero, demostrar que se emplea la noción común del término.

Palabras clave: *Libre albedrío, determinismo, intuiciones populares, influencias externas*.

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1. Introduction

One of us has argued that some contributors to the burgeoning scientific literature on free will set the bar for free will absurdly high (Mele 2014). Robert Sapolsky, in *Determined*, replies that the bar he sets for free will "is neither absurd nor too high" (2023, p. 15). In Mele (2014), the bar at issue featured immaterial souls. Mele reported there on studies he conducted that provided powerful evidence that the great majority of nonspecialists do not believe that having free will depends on having an immaterial soul. Additional evidence for this is provided in Vonasch, Baumeister, and Mele (2018). The bar Sapolsky sets for free will is different. Here is one of his formulations: "Free will can exist only if neurons' actions are completely uninfluenced by all the uncontrollable factors that came before" (p. 84; for other formulations of the general idea, see pp. 14-15, 36, 89, 237). This bar also strikes us as absurdly high. We take it for granted that everything we do is influenced by "uncontrollable factors that came before." We didn't need to be informed about the numerous findings Sapolsky reports to come to that conclusion. We took it to be obvious. And yet this obvious point doesn't cause us to believe that free will is an illusion. Why not? The answer also is obvious: we and Sapolsky have very different views about what "free will" means.

When a philosopher – Alfred Mele, for example – disagrees with a biologist – Robert Sapolsky, say – about where the bar for free will should be set, how should they proceed? To the extent to which the location of the bar for free will is a matter of what "free will" means, one thing that is relevant is ordinary usage of the expression "free will." So it would make sense for the philosopher and the biologist to look into ordinary usage of this expression. We have done that, and in this paper we share our results.

2. Experiment

Our study tested whether lay people's concept of free will dictates that people do things of their own free will only when they are completely uninfluenced by factors that they don't control. This question was inspired by Sapolsky's recent book on free will (2023), in which he assumes that free will does require this.

To test this, 200 American participants who are fluent in English were recruited from the online data collection website "Prolific." After providing informed consent, they read five scenarios in which the behavior of a target person was influenced by a factor over which the person had no control. We asked participants whether the target person had free will using a 1-7 Likert style scale from 1 Strongly disagree to 7 Strongly agree. All participants read all 5 scenarios, but the order of scenarios was randomized for each participant to avoid any potential biases from reading one scenario before the others.

Two hundred participants completed the study, but three participants failed an attention check that was embedded in the questionnaire: "Attention check: Please mark slightly agree." Therefore, we retained 197 participants for analyses. Consistent with best scientific practices, we preregistered the method and our planned analyses, available here: https://osf.io/exgsj. We preregistered to run one sample *t*-tests, but because our sample distributions were not normally distributed, we used the equivalent non-parametric test, which does not assume normally distributed data: a Wilcoxon *W*

test.

3. Results

3.1 Scenario 1: Uncontrolled Preferences

Participants read this statement and indicated their level of agreement or disagreement with it: "People can make decisions about which movies to watch of their own free will even if they don't have complete control over their taste in movies. (agree or disagree)."

As we predicted, most (92.4%) participants agreed that people had free will in this scenario. Only 4.6% disagreed, and 3.0% neither agreed nor disagreed. The average level of agreement was 6.03 (from 1-7), $SE = .08$. This was significantly more agreement than would be expected by chance, Wilcoxon $W = 17830$, $p < .001$, rank biserial correlation = .828. This is evidence that the overwhelming majority of people think that your having tastes that you lack complete control over does not preclude your making decisions of your own free will that are obviously influenced by those tastes.

3.2 Scenario 2: Genetic influences on people

Participants read this statement and indicated their level of agreement or disagreement with it: "Science has shown that our genes can influence our behavior. For example, people with gene X are 5% more likely than people without that gene to graduate from college. Of course, people don't control which genes they inherit from their parents." "People with gene X have free will. (agree or disagree)."

As we predicted, most (79.2%) participants agreed that people had free will in this scenario. Only 9.1% disagreed, and 11.7% neither agreed nor disagreed. The average level of agreement was 5.64 (from 1-7), $SE = .10$. This was significantly more agreement than would be expected by chance, Wilcoxon $W = 14364$, $p < .001$, rank biserial correlation = .473. This is evidence that most people think that ubiquitous genetic influences on you that you obviously don't control do not preclude your having free will.

3.3 Scenario 3: Neurological influences on people

Participants read this statement and indicated their level of agreement or disagreement with it: "Scientists have shown that people's neurons (cells in their brains and nervous system) influence their thoughts and experiences. For example, neurons in the visual cortex are needed for a person to see colors. Humans, of course, have no direct control over their neurons in their visual cortex." "People with neurons in their primary visual cortex have free will. (agree or disagree)."

As we predicted, most (73.1%) participants agreed that people had free will in this scenario. Only 16.2% disagreed, and 10.7% neither agreed nor disagreed. The average level of agreement was 5.31 (from 1-7), $SE = .13$. This was significantly more agreement than would be expected by chance, Wilcoxon $W = 13089$, $p < .001$, rank

biserial correlation = .342. This is evidence that most people think that ubiquitous neuronal influences on you that you obviously don't control do not preclude your having free will.

3.4 Scenario 4: Advertising's influence on people

Participants read this statement and indicated their level of agreement or disagreement with it: "Social scientists have shown that advertising influences people's behavior. For instance, when scientists showed study participants an ad for a vacation in Hawaii, afterwards 40% said they had a more favorable view of vacationing in Hawaii. After following up 1 year later, scientists found that participants shown the ad were 3% more likely to have booked a Hawaii vacation than participants shown a different unrelated ad." "People who booked a Hawaii trip after seeing the Hawaii ad have free will. (agree or disagree)."

As we predicted, most (87.3%) participants agreed that people had free will in this scenario. Only 7.1% disagreed, and 5.6% neither agreed nor disagreed. The average level of agreement was 5.80 (from 1-7), $SE = .08$. This was significantly more agreement than would be expected by chance, Wilcoxon $W = 19503$, $p < .001$, rank biserial correlation $> .999$. This is evidence that most people think that you can make vacation decisions of your own free will even when you are influenced by ads that you were not in control of seeing.

3.5 Scenario 5: Mele's compliance drug vignette

Participants read this statement and indicated their level of agreement or disagreement with it: "In 2029, scientists who work for a secret military organization finally develop a fool-proof compliance drug. The drug is used to make people decide to do various things. Whenever they give a person the drug and then suggest a course of action, that person is irresistibly caused to decide to take that course of action. They make their suggestions through a tiny computer chip that they implant in a person's brain. These chemists gave the compliance drug to John Jones, a very honest man. When John saw a $20 bill fall from the pocket of the person walking in front of him, they suggested keeping it. John considered returning it to the person, who did not notice the bill fall; but, of course, he decided to keep it. After all, the combination of the compliance drug and the suggestion forced John to decide to keep it." "John had free will when deciding to keep the $20 bill. (agree or disagree)."

As we predicted, most (76.6%) participants *dis*agreed that people had free will in this scenario. Only 17.8% agreed, and 5.6% neither agreed nor disagreed. The average level of agreement was 2.57 (from 1-7), $SE = .12$. This was significantly less agreement than would be expected by chance, Wilcoxon $W = 2349$, $p < .001$, rank biserial correlation = .-.759. This is evidence that most people don't think that people have free will in all circumstances. Our findings in the first four scenarios are not to be explained by participants' having a free-will-no-matter-what attitude. Most people think that when compliance drugs force people to do things people don't act of their own free will.

4. Discussion

If Sapolsky is to move persuasively from the data he discusses to the conclusion that free will doesn't exist, he needs to make a case for the claim that the concept his conclusion is about is, in fact, free will and not something else. However, he provides no evidence that the meaning he assigns to "free will" is the meaning that is properly assigned to it – the meaning that we and our readers should assign to it. We, in contrast, have provided evidence that ordinary speakers of English use the expression "free will" very differently than Sapolsky does and that he sets the bar for free will way higher than they do. Now, it is open to Sapolsky to claim that he is right about what "free will" means and everyone who disagrees with him about this is wrong. We don't know how he might go about arguing for this claim; but, at the very least, we have put the ball back in his court. As we have said, we are confident that what Sapolsky calls "free will" doesn't exist. But, as far as we can tell, its non-existence is entirely compatible with the existence of free will.

Sapolsky discusses a host of interesting findings in his recent book. He provides his readers with tons of evidence that our actions are influenced by genes and other things that we don't control. But that isn't evidence that free will doesn't exist. It's only evidence that what Sapolsky calls "free will" doesn't exist. As free will is commonly understood, genetic influence and other things we don't control are perfectly compatible with people having free will.

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